

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Medical Appliance

We, SOCIÉTÉ D'EXPLOITATION DE BREVETS R.G.L., a Body Corporate organized under the laws of Belgium, of 28, Avenue Emmanuel, Machelen, Belgium, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to a medical appliance which enables suppositories, bougies, ovules, or the like to be easily inserted into the body.

15 In a general way, according to the invention, such an appliance comprises a tube which is provided at one end thereof with a cylinder-like part which can be distorted and which in the position of rest is folded back upon itself to receive the suppository or the like, the tube including means for bringing the distortable part into an extended position away from the tube, so that said part pushes the suppository or the like into the body.

20 According to one embodiment of the invention the appliance comprises a tube provided with a bulb at one end thereof and with a cup at the other end, said cup receiving a distortable part into which the suppository or the like is placed, a pressure on the bulb resulting in the pushing of the suppository or the like out of the cup for insertion thereof under the action of the distortable part which is pushed out of the cup to reach an outwardly extended position.

25 According to another embodiment the appliance comprises a piston-like element for pushing the suppository or the like in the insertion direction, and a distortable part such as a sleeve of flexible material one end of which is connected to said piston, while the other end thereof is attached to another element, such as a tube, with respect to which the piston may be moved, said sleeve lying,

in the position of rest, in a folded-back position with the ends thereof near one another, so as to receive the suppository or the like, while in the extended position, that is when the piston has been moved furthest away from its tube, said sleeve lies in an opened-out position, the suppository having been pushed in the insertion direction thereof, during the extending movement of the sleeve.

According to a particular example of the last mentioned embodiment, the piston rod is under the action of a spring which, when it is released from a compressed position, ensures the automatic movement of the piston and, thereby, the automatic insertion of the suppository or the like.

Other details and features of the invention will appear from the description given below, by way of non-limitative example and with reference to the accompanying drawings, in which:

Fig. 1 shows, partially in section, an appliance according to the invention;

Figures 2 and 3 show a larger scale the flexible sleeve, respectively in folded-back and in extended position;

Fig. 4 shows one way in which the sleeve may be fixed;

Fig. 5 shows an automatic type of the appliance according to the invention;

Figures 6 and 7 show changes which may be effected in the automatic embodiment shown in Figure 5;

Fig. 8 shows another embodiment of the invention, and

Fig. 9 shows a modification of the embodiment of Fig. 8.

With reference to Figures 1 to 4, a medical appliance according to the invention comprises essentially a piston 1 which is provided with a rod 2 guided inside a cylinder 3 and which is provided at the end thereof with gripping

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member 4. To this piston 1 is connected one end of a flexible sleeve 5 the other end of which is fixed to the cylinder 3. This sleeve 5 can take the folded-back position shown in Figure 2 and the extended position shown in Figure 3 depending on the position of the piston 1. In the folded-back position shown in Figure 2, the sleeve 5 receives a suppository 6 which will be inserted into the anus by acting on the rod of piston 2, the sleeve taking then the position shown in Figure 3.

The sleeve 5 can be attached in various ways to the piston 1 and to the cylinder 3. In the embodiment of Figure 4 the ends of the sleeve are placed in grooves 7 and 8 provided respectively in the piston 1 and in the end 9 of cylinder 3. The sleeve may have a truncated cone shape in the extended position and be provided with ribs 10a, as shown in Figure 4, over part at least of the length thereof, the thickness of the sleeve at the end fixed of the cylinder 3 being preferably greater to ensure some stiffness, while that part which opens out is thinner to ensure the flexibility thereof.

In the position of rest of the appliance (Figure 1), the part 10 of rod 2 which comes out of cylinder 3 will have a length twice as long as the length of the sleeve in the folded-back position, so that the position of this rod with respect to the cylinder will give a precise indication of the extension of the sleeve. The rod 2 may moreover be provided with return means, such as a spring, which enables it to return by itself after use to the position shown in Figure 1.

Figures 8 and 9 show another medical appliance according to the invention, this appliance being essentially comprised of a tube 31 provided at one end with a pressure bulb 32 which is fixed to this tube in any convenient way and, at the other end, with a cup 33 which is, in the present case, a widening of the hollow inside zone of the tube 31.

On said cup 33 is mounted a flexible sleeve 34, which may be folded back inside the cup to receive in this position a suppository or the like 35. In Figure 8, the sleeve 34 is attached to the cup 33 by being clamped over outside ribs which are provided on said cup. Of course, any other suitable joining means may be provided.

It will be clear that one only has to press the bulb 32 to eject the sleeve 34 out of the cup 33 and, thereby, the suppository 35 which will thus be put in place.

The tube 31 is provided with a small hole 36 for pressure equalizing,

There may also be provided a bulb 38 of the type shown in Figure 9, which has a small hole 39 over which a finger is placed when a pressure is exerted on the bulb 39.

In Figures 5 to 7 has been shown an appliance according to the invention, which

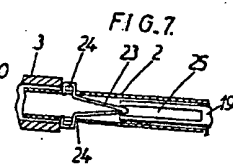
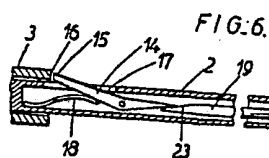
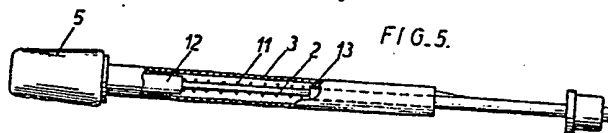
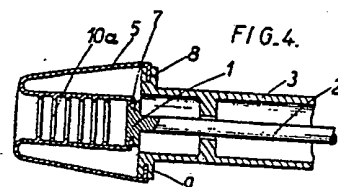
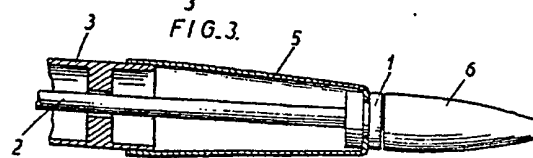
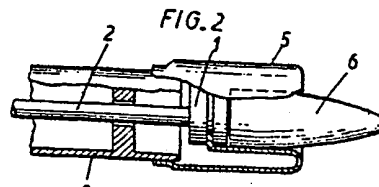
is of the piston type and is provided with automatic moving means therefor.

In the rest position of Figure 5, a coil-spring 11 is retained compressed between a part 12 of rod 2 and the opposite end of the cylinder or an inside shoulder 13 thereof. As shown in Figures 6 and 7, the rod 2 is hollow. In Figure 6, in that position of rod 2 which corresponds to the rest position of the appliance of Figure 5, a rotatable element 14 formed with an end 15 constitutes a locking stop against the end 16 of the cylinder, said rotatable element projecting from rod 2 through a slot 17 thereof. The element 14 is retained in the position of Figure 6 by means of a curved leaf spring 18. The other end of the rotatable element 14 may be subjected to the action of a rod 19 the free end 20 of which projects on the outside of a bell-like element 21 which contains a spring 22 that will retain the rod 19 in the normal position of Figure 6. However, considering the rest position of the appliance of Figure 5 and after placing suppository in the sleeve 5, if one pushes on the end 20 of rod 19, so compressing momentarily the spring 22, the end 23 of the rod 19 acts on the rotatable element 14 so as to bring the stop 15 inside the hollow rod of piston 2, so that the coil-spring 11 contained inside the cylinder 3 can act so as to cause a movement of the piston 1. It will be clear that on releasing action on the rod 19, the spring 22 acts as a return means, so that said rod 19 moves away from the rotatable element 14. When the piston rod 2 is thus brought back to the position shown in Figure 5, the rotatable element 14 automatically returns to the position shown in Figure 6, under the action of the leaf spring 18, the appliance then being ready for further use.

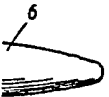
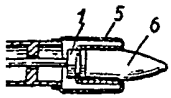
In Figure 7, a V-shaped leaf spring 23 is provided inside the hollow piston rod 2, the ends of the V legs coming out through slots 24 in the rod 2. When one pushes a rod 19 having a hollow end 25 towards said leaf spring, the legs thereof tend to come nearer to one another and to return inside the hollow rod 2, so that the coil-spring 11 contained in the cylinder 3 can again act as in the case of Figure 6, to push the piston 1 outwards.

The sleeves 5 and 34 of the preceding Figures can be made of some suitable elastic material, for instance of rubber, plastic material, gold-beater skin, or the like. In the opened-out position, the sleeve 34 can have, as sleeve 5, a truncated cone shape and it may be provided with ribs over part at least of the length thereof, said ribs thus contacting the suppository in the position shown in Figure 8.

It is clear that the invention is in on way limited to the above embodiments and that many changes may be effected therein without



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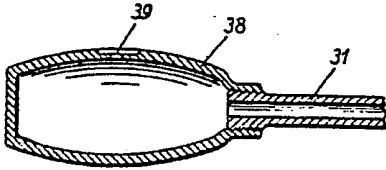
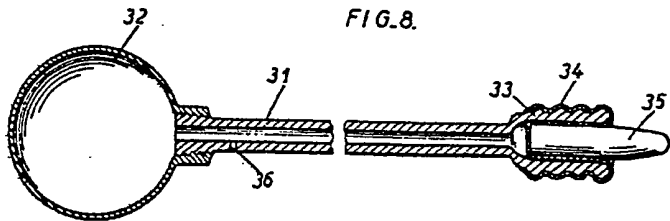
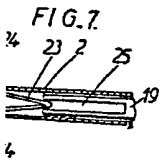


FIG. 9.

